

Statistical Mechanics (PHYS-346-01, Fall 2001)

MWF 3:00-3:50

Professor Tom Narita

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Textbook: Introductory Statistical Mechanics (Bowley & Sanchez)

3 Exams @ 25% each, homework 25% of total grade

Week	Chapter	Topic
1	1	Thermodynamics review – function of state, heat capacity
2	2.1 – 2.10	Thermodynamics review – Carnot cycle, entropy
3	3.1 – 3.7	Classical and statistical probability, counting states
4	4.1 – 4.5	Quantum state, second law of thermodynamics
5	5.1 – 5.6	Canonical ensemble, partition function
	EXAM1	
6	5.7 – 5.15	Examples of partition function, equipartition theorem
7	6.1 – 6.7	Identical particles, Bose and Fermi particles
8	7.1 – 7.5	Maxwell distribution of speed
9	8.1 – 8.5	Blackbody radiation
	EXAM2	
10	8.6 – 8.10	Vibrations in solids
11	9.1 – 9.6	Chemical equilibrium
12	9.7 – 9.9	Grand canonical ensemble
13	10.1 – 10.3	Fermi and Bose particles
14	10.4 – 10.5	Fermi and Bose gas
15	Review	
	EXAM3	